

# **A PATIENT'S GUIDE TO ORTHOGNATHIC (JAW CORRECTION) SURGERY**

## **ORTHOGNATHIC SURGERY & ORTHODONTICS**

Orthodontic treatment (the wearing of braces on your teeth) can correct tooth alignment. However, when the two jaws are of a different size, or shape or in a malposition to one another, orthodontic treatment by itself cannot align the teeth for a better fit. Attempts to do so will end up with a considerably compromised result. Surgery then becomes necessary, combined with the orthodontic treatment. From detailed studies of your case records, your orthodontist and surgeon will recommend a programme of combined treatment.

Coordinated surgical and orthodontic treatment results in a better fit between the upper and lower teeth and a more sound bite and better chewing. Other benefits include improved jaw function, improved appearance, less tooth wear and, in certain instances, speech and breathing patterns may be changed for the better.

## **SEQUENCE OF TREATMENT**

Combined orthodontic and surgical treatment usually requires about 18 – 24 months to complete. Several stages are involved:

- 1 ... Treatment planning.
- 2 ... A period of pre-surgical orthodontics.
- 3 ... Surgical treatment.
- 4 ... A period of post-surgical orthodontics.

The braces are applied at Stage 2 and not removed until Stage 4 is complete.

### **1 Treatment Planning**

Your surgeon and your orthodontist will be the main specialists working together to plan your programme of treatment with you. They will use your dental and facial X-rays, dental plaster models and photographs during the planning. These records will be taken by your orthodontist, and sometime before surgery, will have to be also taken in our office.

Treatment planning begins at your initial visit but no treatment will begin until you are fully informed of the recommended procedures and a firm treatment plan has been established by the surgical-orthodontic team. Other specialists may be involved in your treatment – periodontics for gum treatment, endodontics for root fillings or prosthodontics if implants are to be placed.

### **2 Pre Surgical Orthodontics**

Before surgery can be undertaken, the teeth must be sufficiently straightened so that they meet well together when the jaws are surgically repositioned. This allows your surgeon to place the jaws at surgery in exactly the right position. This orthodontic treatment requires that you wear braces for about 8 – 12 months in the pre-surgical phase and may involve extraction of some teeth to make enough room to straighten the others - but the removal of wisdom teeth can usually be deferred until the time of your jaw surgery. Unfortunately your bite and even your appearance can actually get slightly worse during this phase!

When you last visit your orthodontist before your surgery, your braces will be modified so that they can be used for holding the jaws together during the operation.

### **3. Surgical Treatment**

Once your orthodontist feels that your teeth are sufficiently straightened, you will have another consultation with your surgeon. The Surgeon will review your progress, re-examine the recommended treatment program, and then establish

a final plan for surgical treatment. The overall surgical treatment plan may change slightly at this stage, depending on how your teeth have responded to the initial orthodontic treatment.

Details of the surgery, your stay in hospital and the recovery period are discussed at this pre-surgical appointment. This consultation is to help you better understand the procedure involved in the surgery and to provide a time to answer questions.

Orthognathic surgery is performed in an operating room, in a hospital, under a general anaesthetic. Patients will usually stay in hospital for 2 – 3 days. On the day you are admitted to the hospital, your medical history will be recorded. Some tests (including blood tests) may be necessary but will be kept to a minimum.

An anaesthetist (the doctor who gives you the general anaesthetic) will examine you before the surgery and talk to you about general anaesthesia.

During surgery, the final fit between your upper and lower teeth is determined by a splint (a small plastic wafer) which has been made before the operation in the laboratory using your dental plaster models as a guide. This splint is designed especially for you, and using elastic bands between your braces will be placed between the upper and lower teeth to keep them in a stable position during surgery. This will be removed before the end of the operation. Except in extreme circumstances your jaws will not be wired together at any stage.

On the day after your operation, this splint and tiny elastic bands may be placed between your upper and lower teeth and these will remain in position usually for one week. If the jaw is stable then you will be instructed how to take these elastic bands off for meals and how to put them on again afterwards. The use of elastic bands to keep the jaws together will then continue on a night time basis for another five to six weeks after the first post-operative week. This helps to prevent any early relapse.

Your jaws may feel stiff because the muscles have not been in use. You will have some difficulty moving your jaws and must eat only soft foods during this healing period. Before leaving the hospital you will be shown some jaw exercises which will soon improve your movement.

An X-ray will be taken before your first post-operative visit which serves as a guide to allow the surgeon and orthodontist to assess jaw healing and the alignment of the jaws. This will be repeated at 3 weeks, 6 weeks, 3 months, 6 months and 12 months to check on the stability of the surgery. The final phase of orthodontics will not usually commence until approximately 6 weeks after surgery.

#### **4. Post-surgical Orthodontics**

After healing takes place and your new jaw position is stable, your upper and lower teeth will need further adjustment for a perfect fit by the orthodontist who will advise you regarding retainer wear at the end of treatment.

#### **SCARS**

Upper jaw surgery is always completed from inside the mouth leaving no external skin scar. Lower jaw surgery is also done from inside your mouth, but rarely a small incision may also be made on each side of your face to allow the jaw screws to be inserted. This can often be positioned into a pre-existing skin crease and heals with an almost completely invisible scar.

#### **DIET**

You will need a soft, high calorie, high protein diet for 7 – 10 days and you will need to avoid hard or chewy food for six weeks.

## **SWELLING**

After surgery, there is facial swelling which reaches its maximum with 36 – 48 hours after the operation. The swelling will not begin to decrease significantly until about one week after the operation.

## **SPEECH**

Speech will be more difficult than usual but you are able to speak. The splint is especially designed to interfere as little as possible with speech. You can be understood on the telephone without too many difficulties. This obviously becomes easier with time.

## **RETURN TO WORK/SCHOOL**

Most patients are able to return to their normal activities within 2 – 3 weeks of the operation. Normal sporting activities are encouraged, although contact sports should not be played for at least three months after the completion of the operation.

## **PAIN**

You may be surprised how relatively pain free this type of surgery is. It is not uncommon for patients to have more pain after wisdom teeth extractions than after orthognathic surgery. Appropriate medication will be given to you in the early post-operative period to ease any discomfort.

## **PSYCHOLOGICAL CONSIDERATIONS**

It is not unusual for patients to feel somewhat tired and listless for a few days after any operation and occasionally patients may feel somewhat depressed. However, this feeling quickly passes as patients recover from the surgery and their overall condition improves as they become aware of the significant improvement in function and appearance that has resulted.

## **COST**

Before beginning treatment, you should discuss with your surgeon and the orthodontist the expenses you will incur during treatment. Many of your costs will be covered by your private medical insurance if you are in the topmost levels of cover. Even if you carry private insurance there will still be a gap between your costs and your reimbursement. Arrangements can be made with this office for appropriate time payment, if necessary.

## **COMPLICATIONS**

Occasionally the tiny plates and screws used to secure your jaw may become infected and have to be removed – this does NOT weaken your jaw and often can be performed with a local anaesthetic injection. Lower jaw and chin surgery is performed very close to the nerves that supply the feeling (not movement) to your bottom lip. Thus it is very likely that your bottom lip will be totally numb for up to six weeks after this kind of surgery. Recovery is slow after that, and in a small proportion of cases, it is incomplete. Some numbness of the top lip occurs with upper jaw surgery but is much rarer and recovers quickly in virtually every case.

Sinus problems occasionally occur after upper jaw surgery, but are more frequently improved by it!

Occasionally with lower jaw surgery, the jaw will separate in the wrong place. Usually this can be corrected at the time of operation but rarely, it may require the procedure to be abandoned and redone at a later date when the jaw has healed.

Bleeding is a rare complication either at the time of the operation or afterwards, but is more common with upper jaw surgery which is why you may be asked to donate your own blood beforehand. If only the lower jaw is being corrected, most patients will not be required to donate their own blood for transfusion during surgery.

If you smoke or take an oestrogen containing oral contraceptive, this will thicken your blood and may mean that parts of your jaw will not receive an adequate blood supply after upper jaw surgery is performed. This may mean further extensive dental treatment is required later. This complication is rare but you are advised to give up smoking and to use another form of contraception for at least six weeks prior to and after your jaw surgery.

Early or late relapse of the jaw position is an acknowledged complication but may mean more surgery is needed.

TMJ (Jaw joint) or jaw stiffness problems often improve after this type of surgery but may occasionally begin after it.

Other major complications including anaesthetic recovery problems and post-operative blindness can happen but are extremely rare and have not occurred to any of our surgeon's patients.

Your surgeon would be happy to arrange for you to speak with one of their patients who have previously undergone a procedure similar to your proposed surgery.